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FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

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MR. RUNCIMAN.

Since the outbreak of war, Mr. Runciman has been transferred from the Presidency of the Board of Agriculture to that of the Board of Trade. The transference may be regarded as a promotion; for, after the Premier and the War Secretary the head of the Board of Trade will probably be the most responsible position in the kingdom for some time to come. From a national point of view, we may be satisfied that an important post has been entrusted to capable hands; but at the same time, we cannot help regretting that the Board of Agriculture has lost one of the most enlightened and progressive Presidents it has ever had.

Veterinary surgeons know well how much Mr. Runciman has accomplished during his too short stay at the Board of Agriculture, and how much more he has initiated. Every adjunct to agricultural progress received his encouragement, and the veterinary profession amongst them. Recognising the national value of veterinary science, he had seriously taken up the problem of its development by the State; and though his work in that direction is still only in the inceptive stage, its value and promise are unquestionable. We only hope that his successor will continue the broad policy set on foot by Mr. Runciman.

TUBERCULOSIS IN BOVINES AND COMPENSATION.

In the instructive discussion upon tuberculosis which we print this week, repeated reference is made to the fact that the average farmer has little or no visible financial inducement to lead him to join in the eradication of the disease. We know that this is so; and that eradication is often so troublesome and costly a process that many farmers shrink from it. This is one of the reasons why bovine tuberculosis should have been legislated against long ago. Individually, the public are not yet prepared to pay higher prices for tubercle-free milk; but collective public opinion has been quite ready to support a State crusade against tuberculosis for years past. Further, legislation against an animal disease always educates stockowners regarding it; and now that legislation has been established, it will not be long before farmers begin to appreciate the advantages of eradicating tuberculosis.

THE NEW CHARTER.

Information is to hand as we go to press that the Charter to the R.C.V.S. has been granted by the Privy Council on Monday last, 10th inst.

STREPTOCOCCUS AND STAPHYLOCCUS VACCINE IN CANINE PRACTICE.

Patient. Bull-dog, adult, approximate weight 60 lbs. First seen in January, 1913. A portion of the skin over the carpal joint was honeycombed with sinuses, the openings of which discharged pus.

Treatment. Antiseptic treatment was used with no result, and finally, in March the affected piece of skin was excised. All went well until December, when a further area of skin became affected. Excision was now impossible on account of the extent of the area involved. I therefore tried treatment with streptococcus and staphylococcus vaccine combined (P. D. & Co.) I gave 50 million as an initial dose, with no perceptible result. Five days afterwards I gave a second dose of 75 million, again with no apparent result. As a third dose I injected 100 million. This time there was some systemic disturbance and so the same dose was repeated in five days, but this time no constitutional disturbances was observed. As a fifth dose I injected 200 million, and for the sixth and last dose the same quantity again.

Remarks. After giving the third injection the sinuses in the skin began to heal and no fresh ones appeared. After the fifth injection no discharge was visible, no sinuses seemed to exist anywhere, and the skin looked almost normal. The sixth dose was given as a precaution, and I have heard no more of my patient since. Sufficient time has not yet elapsed to enable one to make up one's mind as to the permanence of the cure, but the result up to now has been very satisfactory, and at least as good as the operative treatment.

W. H. W.

STERILITY IN COWS AND MARES.

Wester has published (*Tydschrift voor Veeartsenykunde*) an article upon this subject, in which he deals only with the endemic sterility which is frequently encountered in certain years. He thinks that these cases are more frequently met than formerly, because of the practice of a number of breeders utilising the same bull in common. Veterinary practitioners in general set little account on this last consideration, and most frequently attribute sterility to granular vaginitis.

It appears, however, that that disease only exercise a slight influence upon sterility.

The Swiss practitioners formerly attributed this sterility to an occlusion of the neck of the uterus,

persisting even during the period of heat, and rendering the penetration of spermatozoa into the uterus impossible. To-day the Swiss attach great etiological importance to the cystic transformation of the Graafian vesicles. Wester considers that a great number of these so-called cysts are nothing more than follicles arrived at maturity.

In Switzerland, it is supposed that the "yellow-bodies" often cause sterlity. It is known that, at the period of coming into heat, an ovarian follicle ruptures and is replaced by a "yellow-body." This is probably an organ of internal secretion which prepares the uterus to receive the fecundated ovum. Generally this yellow body is re-absorbed; but it *normally* persists during gestation. It is known, however, that yellow bodies may persist even in the absence of gestation, as is observed in uterine catarrh.

In these cases, the yellow bodies impede ovulation and cause sterility. It is comprehensible that in these cases the extirpation of the yellow bodies may be useful, as Zschokke affirms it is.

Wester, however, is not convinced that this is really what happens. He believes that the Danish and Swiss practitioners extirpate, *not* the old persistent yellow bodies, but normal follicles. Old yellow bodies, he points out, are very difficult to enucleate. Wester therefore thinks that the enucleation of so-called cysts, and of so-called persistent yellow bodies does not rest on any scientific basis and is merely empiricism. This view does not prove, however, that the method is defective; for if the Swiss breeders had not found the results satisfactory, they would not so often ask veterinarians to perform the operation.

In recent years the Danish veterinary surgeon Albrechtsen has found that, in the majority of cases, the cause of sterility is primary uterine catarrh. It is possible that secondary cysts develop as a result of this affection. Wester is of the same opinion, and attributes a certain importance to primary inflammation of the neck of the uterus. He deduces from this opinion that sterility should be treated equally from the curative and preventive points of view, by modifying the uterus. Unfortunately, this treatment is difficult. When the uterus is voluminous, Wester advises injections of salt solutions or of solutions of iodine and iodides.—*Annales de Méd. Vét.*

Spurious Lactation in Mares.

Although these are not very many accounts of spurious lactation in our literature, yet the condition is not rare. Hauptmann now reports (*Tier. Zentralbl.*) that he has seen spurious lactation not only in bitches, but also in two mares, which were not pregnant, but had both foaled in the previous year. The two cases were very similar, and therefore only one is described.

A five-year-old mare had been covered, and had ceased to come into use again. Indolence and an increase of the bodily bulk set in; and towards the end of the normal period of pregnancy the udder became enlarged, while an œdema appeared in front and behind the udder. This œdema disappeared again when the mare was exercised. A secretion of milk afterwards appeared; and the horse was put off work. After the normal period of pregnancy had expired, an internal examination was made, and yielded a negative results. The horse was then put into daily work; and soon after this the body and the udder resumed normal conditions.

Ohler has observed spurious lactation in three mares, and considers the following case especially worthy of report.

The mare in question had often been brought to the stallion, until at last she refused him. After about nine months a more or less pronounced "paunch-belly" appeared, the muscles of the back dwindled, and the spinal process, in addition to the ribs, became visible. The udder and vulva became enlarged in such a fashion that the owner feared the oncoming of a premature labour, and sought Ohler's advice. The mare though formerly good-tempered, had now become so vicious that she would not allow herself to be touched. Ohler, believing from her appearance that she was far advanced in pregnancy, refused to put her under forcible restraint for examination. From time to time, during movements of the animal, milk could be seen to flow away. From that time forward the mare was put to no further work.

After the expiration of the normal term of pregnancy, Ohler, on the occasion of another visit, again had the opportunity of examining the mare. The owner had watched her every night for ten days past. Ohler immediately saw that the mare was much quieter than on the previous occasion, and that the udder had greatly decreased in size. The flow of milk could no longer be observed. An examination could now easily be carried out; and the result proved that the uterus was empty. —*Munch. Tier. Woch.*

W. R. C.

A Commissioned Veterinary Corps for the Army (U.S.A.)

By Garrison Steele, M.D. (University of Paris), Dr. Med. Veter. (Berlin), Chicago.

[This abstract is from an article which appeared in the *New York Medical Journal* of July 4. Many of our readers will remember the long struggle of the profession to obtain due recognition in the U.S.A. Army—how they have hoped and striven only to be again and again disappointed. The following is the latest development of the position.]

The true attitude of the medical department of the United States Army toward the veterinary service came out clearly in the first session of the present sixty-third Congress. On May 1st of last year Mr. James Hay, of Virginia, chairman of the House Committee on Military Affairs, himself reintroduced the Bill, to Consolidate the Veterinary Service, U.S. Army, and Increase its Efficiency (now known as H.R. 4541), and it was, according to custom, turned over to his committee for the first reading. It was sent for recommendation to the War Department. When it was returned to Mr. Hay, a number of highly important letters were attached; one from the Secretary of War; another from the chief of the quartermaster corps. The third and

most important of all, as far as this article is concerned, was from the surgeon general of the army, which we reprint verbatim :—

WAR DEPARTMENT,
OFFICE OF THE SURGEON GENERAL,
Washington, June 12, 1913.

Memorandum for the Chief of Staff:

Subject : Bill H. R. 4541, to consolidate the veterinary service of the Army and increase its efficiency.

Veterinary medicine is a learned profession, with a voluminous periodical and permanent literature of its own. For efficiency, there is the same necessity that the horse doctor should be learned as for the man doctor, and as his patients are not able to speak and describe their symptoms, a greater amount of scientific accuracy and acumen is necessary for a correct diagnosis. The therapeutics and pharmacy of veterinary medicine are largely the same as for the medical service, and in Europe, where veterinary medicine has the dignity and standing of a learned profession, it has made valuable contributions to our knowledge of the causation of diseases. It is believed that it can not be placed on a high standard of efficiency without long continued application of the same agencies which have raised the medical corps of the army to its present standard. Conspicuous among these is the system of examination for admission to the service and for promotion. Others which may be mentioned are the liberal supply of literature and appliances and a close touch maintained with the progress of the profession in civil life.

It is believed that these things can be accomplished for the veterinary service only by making it a part of the medical department and permitting it to share the administrative machinery of the medical corps. This would not only conduce to the elevation and efficiency of the veterinary service, but would also be in the interest of economy, as all of its supplies could be most advantageously purchased, cared for, and issued through the machinery of the medical department. As regards the administrative question of supplying veterinary surgeons to the quartermaster department, it is believed that no difficulty would arise, as the veterinary officers needed for that service could be placed under the orders of the quartermasters at depots, etc., where their services were needed, or ordered to report to the chief of the quartermaster corps for such service and duty as he might desire to assign them. The establishment of the veterinary service as a corps of the medical department, like the dental corps and the army nurse corps, is not proposed for the aggrandisement of the medical department, but because it is believed to be the only way in which that service can be raised to a fitting plane of dignity and efficiency such as it has reached in European countries and in the armies of the great military nations.

For these reasons the draft of the Bill submitted by the War Department on January 6, 1913, a copy of which is attached to the General Staff Report No. 8443, herewith, is believed to be much better calculated to increase the efficiency of the sanitary service of the army than the Bill H. R. 4541 herewith.

GEORGE H. TORNEY, Surgeon General.

Since this policy is adhered to in the *Report* of the Surgeon General, United States Army, to the Secretary of War for the year 1913, in which, on p. 169, we find a repetition of the language of the letter, we may take it seriously as the undoubted attitude of the medical department toward the veterinary service, and may examine the statements in the surgeon general's letter.

At the outset the letter says : "Veterinary medicine is a learned profession, with a voluminous periodical and permanent literature of its own." Of inestimable value are the words of the surgeon general on this subject at this time The medical department is the only department which could and does appreciate this point —a point which has been entirely lost sight of in the army for the reason that heretofore no one with knowledge of the fact, and authority enough in the army to back up such a statement, has been frank enough to admit it, nor firm enough to take a stand upon it. In Europe, in continental Europe especially, veterinary medicine is part of the national educational system, provided for and endowed by the State. National veterinary colleges, like those of Berlin in Germany, Budapest in Austria, Alfort near Paris in France, and the Veterinary College of Milan in Italy, are thus linked to the national government, and the products, the aspirations, the standards, the ideals of these old world institutions are known and venerated. In America also, more and more, the Veterinary Colleges are becoming part of the State system of education, as at Cornell University and the University of Pennsylvania, and the pattern is derived from the old world. Neither this, nor a knowledge of the voluminous periodical and permanent literature of veterinary medicine is known to the army, other than by the medical department. Veterinary medicine is a technical branch removed from military men's ken of thought. The periodical literature is in many languages—richest in German, French, and Italian ; while the permanent literature, on established scientific fact and practice, though not so voluminous as that of human medicine, is at once the delight and despair of its students.

Next, it is certain that the medical sciences in which each must be grounded are the same for the veterinarian as for the physician. As the surgeon general's letter says, difficulties beset the path of the practice of the veterinarian that are unknown to the physician. Diagnosis of lameness in the horse, for example, are fraught with numerous perplexities. The difficulties increase with the complications of diseases ; because, as the surgeon general reminds us, the animal is dumb.

Continuing, the surgeon general says that the therapeutics and pharmacy of veterinary medicine are largely the same as for the medical service. This is true. The drugs are mostly the same, though the doses and effects, especially the latter, are very different. The difficulties, moreover, arising from the varied posology for the different domesticated animals, the various species, are at least equal to those that arise in the treatment of human beings. The surgical principles are the same ; though comparatively anatomy is fraught with far greater complexity than human anatomy.

Further the letter says that in Europe, where veterinary medicine has the dignity and standing of a learned profession, it has made valuable contributions to our knowledge of the causation of disease. Koch, Schutz, von Behring, von Ostertag, Pasteur, are names to which probably the letter refers, for all have contributed knowledge of the etiology of veterinary disease. Similar conditions have prevailed in America ; witness the work of Theobald Smith, who discovered the cause of Texas fever in cattle and thereby suggested the danger from insects as carriers of disease, which led to the discovery of the means of propagation of malaria and yellow fever. De Schweinitz, Marion Dorset, and V.A. Moore are other Americans renowned in the same field.

Furthermore the application of the agencies which have raised the army medical corps to its present high standard of efficiency will also raise the veterinary corps. This means the entrance examinations, work in the army medical school, promotional examinations, and the rigorous surveillance of the work of medical officers. The framers of the veterinary bill had in mind all these things. What better model, aiming to produce

efficiency in the veterinary service, could there be than that of the medical corps? A liberal supply of literature and appliances in veterinary corps, as in the medical corps, is certainly necessary. This means power to learn and power to apply what is learned. Such an opulence in the furnishing of means of acquisition of knowledge and work would contrast with the stinted supplies at present furnished to veterinarians. The keeping in close touch with the progress of the profession in civil life has been the making of the medical corps and it will be the making of the veterinary service.

Finally, the surgeon general's letter states that the plan of attaching the Veterinary Corps is not proposed for the aggrandisement of the medical department.

The letter closes with the statement that the attachment proposed is the only way to give dignity and efficiency to the veterinary service as in Europe. There the efficiency and concomitant dignity of the veterinary services is due to the commissioned standing—rank, which there signifies advancing knowledge, is attested by promotional examinations from grade to grade. The medical department knows that until this is done for the United States army veterinary service, there is no possibility of raising its standards.

The medical department advises that the veterinarians of the army be formed into a corps under the provisions of a statute which will standardise the work. The veterinarians in the service at present are just so many units; the medical department has declared most emphatically that only just recognition of a commissioned veterinary corps can overcome the dissipation of energy and bring proper returns of economy and efficiency in advanced veterinary work. Mr. Hay, chairman of the House Committee on Military Affairs, voicing the same thought when the Bill unanimously passed his Committee on February 2nd, said: "The veterinarians of this country are a body of highly trained and intelligent men who have made and are making great strides toward progress in their profession; and it is not reasonable to expect that the Government can secure the best talent of the profession unless some fitting and substantial recognition is given it."

This article is meant as an examination and exposition of the letter of the surgeon-general, and is not a piece of special pleading. The plan was proposed by the medical department itself, for reasons which it gives, and because of statements for the truth of which it vouches.

CONGRESS R.S.I. AT BLACKPOOL.

Notes on the Eradication of Tuberculosis from Dairy Herds. By George Percy Male, M.R.C.V.S., [Abstract].

Although I am addressing a Public Health Congress, I will put aside the question whether tubercle bacilli of bovine origin taken in the milk confers an immunity against human infection, and is good, as some claim, or bad for the human race; but considering it from the agriculturist's point of view, it must be clear to all those who have had experience of the great losses due to tuberculosis in a herd, that it is to their interest to get rid of the diseased animals as soon as possible. It follows, therefore, that any and all information bearing upon this matter must be of some service, especially if it is a faithful record of failures or successes. This is my only apology for submitting these brief notes to the meeting—that others may be induced to relate their experiences, and so, by the accumulation of evidence, we may be better able to cope with the disease. From some accounts it would appear to be a very easy matter to stamp out tuberculosis, but all who have had much experience under different conditions will not embark on the project in any light-hearted manner. It must be a matter of *very* serious consideration, and unless the owner has determination and enthusiasm and is prepared to lose money at the commencement, it would be best not to attempt it at all.

No hard and fast rules can be laid down: but, speaking broadly, there are two methods of eradication: (1) Slaughter of all diseased animals within a short period; (2) Isolation of affected animals with a view to their gradual elimination from the herd.

Various modifications of these two methods can be made according to the conditions met with in the different herds. Speaking from my own personal experience I am quite convinced that the sooner the diseased animals are removed from the possibility of infecting the healthy ones the better, but of course immediate slaughter of all reacting animals can only be done where the percentage affected is small, or where expense is no consideration. The first loss, even though it may appear very large, is the best. In any case, those clinically affected should be slaughtered at once, the others may be isolated and fattened off or otherwise disposed of. It goes against the grain to slaughter a number of animals in a short space of time, but when one considers the enormous losses in a badly affected herd from "wasters," sick cows, sudden and sometimes unexplained deaths often due to tuberculosis, it is more economical to do so. These losses being spread over a period are not noticed to such a degree, but if accounts were strictly kept it would surprise us all.

The veterinary surgeon is very seldom needed in a tubercle-free herd, the cows require less food to keep up their condition, there are rarely any udder troubles, and the cows command a higher figure when sold. A client who has a healthy herd told me a short time ago that his cows had not had a dose of medicine for twelve months, and nothing was ever wrong with them. I should have liked to add here that the public pay more for tubercle-free milk, but unfortunately this is not often the case, and the farmer does not receive the encouragement he ought in this respect.

I trust my remarks under this head will not be taken to mean that all reacting cows in this country should be slaughtered at once. This has been advised by several medical officers of health, but the famine in milk would be so great as to render it impracticable; the eradication of tuberculosis from the dairy herd must of necessity be a gradual process.

If the second method is decided upon the following provisions are necessary for success:—

1. Separate buildings for isolating diseased animals.
2. Isolated pastures and watering places for affected animals.
3. Separate attendants.
4. Facilities for the frequent application of the tuberculin test at least every six months.
5. All animals introduced into the herd to be quarantined and tested twice before being put with the healthy herd.
6. Separation of calves from tuberculous cows immediately after birth.
7. Proper sanitary arrangements in all the buildings.
8. Thorough disinfection of all places after occupation by diseased animals. Also the human element must not be forgotten. To ensure success every detail must be carried out with intelligence and thoroughness. New features are constantly arising which can only be dealt with by a capable man on the spot.

1. Some authorities consider it is sufficient to use the same building with a partition only between the two herds, maintaining that isolation is then complete; but when one considers the many chances of tubercle

bacilli being carried by means of soiled fodder, men's boots, and other articles it will be seen to be a very risky procedure; my own experience is certainly against it.

On large holdings separate farms should be employed, and on smaller ones the buildings should be as far removed as possible from each other.

2. It is difficult to prove that certain pastures are infected by being grazed by diseased animals, or how long they remain infected, but experience indicates that tubercle bacilli remain alive for considerable periods. Some would have us believe that the chances of healthy animals being infected when grazing with others in the open air are almost negligible, but one only has to watch a large herd feeding on a limited pasture, especially if food material is carted to them, to notice the ease with which the grass, etc., becomes soiled with excreta; and when one remembers that the excreta may, and often does, contain millions of tubercle bacilli, the necessity for separate pastures and watering places becomes apparent.

7. The best sanitary arrangements in the world will not eradicate tuberculosis from an affected herd, but they will lessen to some extent the chances of infection. For this reason the ventilation and drainage should be of the best, the floors should be properly constructed so that the dung can be removed with ease, the cows kept clean, and the fodder soiled as little as possible. Separate water troughs for each cow should be provided, and partitions so placed at the front of the stalls that infection is reduced to a minimum. The system in large sheds of allowing the cows to face each other must be condemned.

9. It has been conclusively proved by the Woburn experiments, which were carried out at the instance of the Royal Agricultural Society of England, that healthy calves can be reared from tuberculous cows if proper precautions against infection are taken. They should be immediately removed at the time of birth, disinfected and isolated. The milk for suckling calves, if obtained from tuberculous cows, should be boiled; it is not sufficient to raise the temperature 160° F., as is sometimes advised. If a scientist was always on the spot to see that the milk was so heated and kept there for a certain time the tubercle bacilli would probably be rendered harmless, but in practice a neglect to carry out all these precations may give rise to one of those relapses which those who have had experience must have encountered sooner or later. This I know from a recent experience of pasteuring milk; the owner was away for a time, the milk was not properly heated, and resulted at the next test in several young animals reacting.

This was especially disappointing as the herd had been free for two years with the exception of the original diseased cows, which were left alive for breeding purposes, as they were very valuable. The milk from these cows, when examined biologically, contained a large number of tubercle bacilli.

4 and 5. I have left the subject of tuberculin testing until last, as it is one about which so much discussion has arisen. Without it there is no possibility of separating the healthy from the diseased. In *expert* hands it is a most reliable and sensitive test, but we must not shut our eyes to its idiosyncracies, if I may use the word in this connection. I have statistics extending over a period of years relating to a number of herds I have tested, and post-mortem records of about 300 cows slaughtered. Space will not permit me to quote them in full, but I may claim that I have never yet seen a case where an animal has given a typical reaction to tuberculin, and when the carcase has been *properly* examined that has not been found to be tuberculous.

Unfortunately, however, the reaction given bears no relation to the extent of infection; in fact a certain small proportion of badly diseased animals, less than one per cent., show very little or no rise in temperature. Others again will give a reaction once and at subsequent tests, even though several months' interval is allowed, will show a rise in temperature of only one or two degrees. Examples of this will be seen in the case of cows 67, 253, and 48. It will be a matter for discussion whether these results may be ascribed to the lesions having become encapsuled or whether it is an acquired immunity to tuberculin.

Another question which suggests itself is whether any cases of tuberculosis in cattle ever recover. The opinion I have formed as a result of my observations is that complete recovery, very rarely, if ever, takes place in dairy cows, and I have made a rule that if once a cow gives a typical reaction she shall be considered diseased even though she fails to give a definite reaction at subsequent tests extending over a considerable period of time.

There is evidence to show that the disease may remain quiescent in a cow for years until the defences of the body are weakened by some condition such as parturition, excessive milk production, disease, etc., when the bacilli again become active and a rapid progression of the disease results, *e.g.*, see cows 175, 156.

The results also confirm the opinion that cattle may live for years under ordinary conditions although affected with tuberculosis; and with this knowledge owners may be advised in some circumstances to go on milking and breeding from their cows until an opportunity comes to fatten them. This will of course delay the complete eradication of the disease, but if not continued too long, and with frequent veterinary inspection and biological examinations of the milk, it may be justified on the score of economy. Although I fear we may not look for recovery, it is consoling knowledge that the disease is not usually a rapidly progressive one, *e.g.*, cows 185, 243.

A matter which has to be considered is the disposal of reacting cows. It is obvious that the farmer unless compensated will not destroy these carcases. They will be used for human food if passed by the meat inspector. In some places carcases destroyed under the Tuberculosis Order are not allowed to be used for human consumption, and I should like to hear the opinion of the medical officers of health on this point. The Royal Commission have laid down rules for the guidance of meat inspectors. Shall these be followed or not?

	Tested.	Reaction.
Cow 67.	Nov., 1909	Negative.
	Oct., 1910	Positive.
	Aug., 1911	"
	Feb., 1912	Negative.
	March, 1912, slaughtered.	Tuberculous lesions in both lungs, bronchial and mesenteric glands.
Cow 253.	April, 1909.	Positive.
	Sept., 1909	Slight reaction, 102·5
	Sept., 1910, slaughtered.	Tuberculous lesions in liver and hepatic glands.
Cow 48,	Oct. 1909	Positive (temp. 104)
	Nov., 1909	Negative
	April, 1910	"
	Oct., 1910	"
	May, 1911	"
	Nov., 1911	"
	April, 1912	"
	Aug., 1912, slaughtered.	Extensive tuberculous lesions strongly encapsuled in lungs, retro-pharyngeal and mediastinal lymphatic glands.

	Tested.	Reaction.
Cow 175.	April, 1909	Positive.
	Aug., 1909	Slight reaction.
	Dec., 1909	Negative.
	Oct. 1910	"
	Jan., 1911, slaughtered.	Old tuberculous lesions strongly encapsuled, also signs of recent generalisation.
Cow 156.	Dec., 1909	Fositive.
	Jan., 1910	Negative.
	Jan. 1911	"
	May, 1911	Slight reaction.
	Sept. 1912	Positive
	Dec., 1912, slaughtered.	Tuberculous lesions in lungs, mediastinal, and mesenteric lymphatic glands.
Cow 185,	Oct., 1911	Negative.
	April, 1912	Positive.
	Oct., 1912	"
	Sept., 1913	"
	Dec., 1913, slaughtered.	Tuberculous lesions in a few mesenteric glands.
Cow 243,	Nov., 1911	Negative.
	Sept., 1912	Positive.
	Sept., 1913	"
	Feb., 1914, slaughtered.	Slight tuberculous lesions in lungs and bronchial lymphatic glands.

Discussion.

The President said he did not wish to take any part in the discussion but he confessed to a very considerable interest in this part of their work, and he regarded the whole question as distinctly within the range of practical politics. Of course the financial issues which were involved in the question were a very serious item when approaching stock-breeders. That it was commercially sound he was convinced, and that it was worth the outlay he was more than convinced. But there were certain preliminary conditions which were absolutely essential, and which Mr. Male had more or less enumerated. These should be carried out before anything was done in the way of attempting complete eradication. In this condition he referred first of all to the reconstruction of buildings. His experience had been so unsatisfactory that he would have nothing to do with any attempt where suitable buildings were not available. Housing was to his mind the first important preliminary step. And then before entering on this campaign he thought it was very useful that there should be a preliminary period in which the farmer had exerted himself to get rid of a certain percentage of the tuberculosis which existed. This could be done somewhat on broad lines: the farmer should be first instructed in the value of thorough, repeated, and efficient disinfection. He did not know whether the author's post-mortems agreed with his, but he regarded much of the post-mortem evidence which he saw on tuberculous subjects as being rather indicative of great attempts at recovery but of repeated infection taking place at the same time. The buildings were more or less laden with infection. Any ordinary dust inspection would show them that. One was convinced of the extraordinary widespread nature of the infectious dust in these cow-sheds, and all that material must be got rid of before anything further was attempted.

Then there should be some attempt at the separation of animals according to age. They would see mixed up in large stocks, animals of all ages. He knew it was a very difficult practice to carry out thoroughly, but old animals should be separated from young animals as far as possible. He was connected with one large herd which was free from tuberculosis, but even so they were definitely carrying out this grading of cattle for housing purposes. The object was of course obvious.

Coming to the question of the time required, Mr. Male said five years, but he was personally of opinion that if it extended for five years it was hardly worth while; the financial drain which was going on was a very large one, and he thought they ought to be able to do it within a period of two years, or at most three years.

There was one thing, however, which he did not regard as pointing to a lack of success, and this was the fact of an odd re-action turning up in the herd. It was almost impossible to prevent this. He knew perfectly well that surrounding some of the farms in which they had been able to do this work, they had other farms containing grossly infected animals grazing in close proximity, and he believed that the question of infected pastures was of much greater importance than many people believed. Odd cases of infection were almost bound to occur, but a repeated application of the tuberculin test at set periods would ensure the finding of such a case before she became infective to others. That was a great and important point which many men who had been doing the work had overlooked, and Mr. Male very pointedly drew attention to it.

The separation of healthy from tuberculous cows was of course essential, and the cheapest plan was the one in which they dealt with the whole business in a drastic manner at the outset. That was to say that after they had commenced to deal definitely with the herd and had applied the tuberculin test, they should get rid of the reacting animals from the premises altogether. But sometimes it was advisable and necessary to keep some of the cows which were in calf and there was no very serious risk in doing that if they isolated them from the others and took their calves from them.

The question of the disposal of milk from an infected group of animals was a matter of some importance, and up to now he had always dealt with it either by complete sterilisation, or where reliable sources were obtainable by complete pasteurisation.

The question of rearing sound stock was most important—it was the key to the whole situation. A man having decided to have a disease-free herd would have to make up his mind that he would not go outside. He should, as far as possible, be in the position to maintain his own herd from the animals he had reared under special conditions. The results in one particular herd that he had had under his charge a good many years was that they had now bred something like 170 animals on the farm under special conditions established, and in no case had one of these animals reacted to the tuberculin test.

The difficult animal to deal with was the probationary animal in the stage which elapsed between the preliminary test and the arrival of the time when they were in the position to maintain the herd themselves—animals which had to be bought in the markets or fairs, or from the districts. These animals did present a serious difficulty, and they now isolated such animals from the herd proper for a period of not less than three months, so that they could be again tested before entering the herd. He used to do the second testing at the end of the month, but he was not satisfied that that was sufficient. He thought they must let a period of not less than three months elapse before applying the second test, and if the animal passed the second test he thought they were in a pretty secure position, provided that the other conditions had been complied with.

One great point in all this work, however, was the human element. It was just as necessary to select the farmer as to select the stock. He did not want to be offensive to anyone, but there were some particular in-

dividuals with whom it would be absolutely hopeless to attempt to carry out such work. They were of the class who regarded small details as unimportant, and therefore quite open to neglect. It was a great point to select the right type of individual—one whom they could trust.

The question of preliminary disinfection was also a matter of importance, and apart from the question of eliminating tuberculosis completely, he had been struck with the enormous effect in badly infected herds that disinfection had had without any other measures. Where they had completely destroyed the enormous amount of infection available, the improvement in the condition of the herd had been very marked and had progressively improved over a number of years. That in itself had urged him from time to time to suggest that in the regulations dealing with the control of dairy herds it would have been very much better if instead of asking for a periodical whitewashing, which was only a cloak for much it would be better to remove, a clause requiring periodical and efficient disinfection were made compulsory. He was quite certain that not only tuberculosis, but many other things which they found existing in the same conditions which fostered tuberculosis would diminish if this were done. Abortion, pneumonia, and other conditions they found rife herds where tuberculosis ruled high, would diminish alongside the tuberculosis.

He would like to say how much he appreciated Mr. Male's efforts, and how very interesting his tuberculin tests were. He had tested a good many animals for tuberculosis, but he had not tested reacting animals over the same period that Mr. Male had. His usual experience was not to keep anything of that sort beyond twelve months, but Mr. Male's work had extended over a period of three years.

Arising out of these tuberculin tests there was a point of much interest he had found in practice, and that was in the testing of young animals—the testing of calves and yearlings. He thought it was very easy to make a mistake in the reactions which they got in animals up to six months, or even up to twelve months. He believed in commencing the testing as early as they liked, but he thought they should be very careful in their observations of their temperature charts with very young animals. He had known cases where he had undoubted tuberculin reactions in two or three young pedigree bulls up to six months of age. The same reaction was obtained again up to the period just before they were twelve months old; but in two cases the reaction had ceased after that period, and in one case where he made a very thorough post-mortem he could find no evidence of any tuberculous infection at all. He did urge care in the reading of temperature charts.

There was the question of whether they got reaction without systemic disturbance; it depended on the tuberculin used, and the doses. He himself was a believer in heavy doses, and it was very difficult to conceive a proper reaction without systemic disturbance, and it was a matter of some diagnostic importance whether they got the oscillation in the curve in an upward direction, or perhaps indicated over an eight hour period. In his opinion it wanted very careful reading. He only gave it for what it was worth, and he had no doubt that a good many people would differ and say they should take it as a purely remedial process, and read the figures which were before them. He differed from that in the light of the experience he had had, and could not conceive a typical or an efficient reaction taking place without producing some kind of systemic disturbance.

Another class of case he had come across in the last two years, in which instead of a rise in temperature they got a fall. All the cases of that class he had seen were animals which showed a considerable amount of systemic disturbance with well developed tuberculosis on post-mortem.

Mr. MALE pointed out that cow 48 given in his table failed to react six times, and she had extensive lesions in the lungs.

The PRESIDENT said he made the statement that an animal giving a temperature reaction to efficient tuberculin must show some systemic disturbance. It did not seem to him to be very difficult to believe that they might get absolute cessation of activity and outpouring of the production of the tubercle bacilli, and his post-mortem reading suggested to him that such possibilities did occur.

Mr. HOLBURN, M.R.C.V.S., said he had advocated very strongly the system of inspection and the slaughtering of infected animals, and he was very pleased to hear the remarks on sanitation that day. In swine fever they saw what could be done by disinfection. They must admit that the tuberculin test was very reliable, but five years ago he said it was too delicate a test to be put into common use, and he was of that opinion today. He would like the author to tell him what tuberculin was used. He saw that cow 48 gave a positive temperature of 104, and he would like to know what time after inoculation that temperature was reached and what form of tuberculin was used. He had used three kinds of tuberculin. Some tuberculins were very long in giving a reaction, and the veterinary surgeon must not give over taking his temperature too soon.

Prof. WOOLDRIDGE congratulated Mr. Male on his paper in which he took it that the author suggested there were two methods of eradication. One was the slaughter of diseased animals within a short period, and the other the isolation of infected animals. He though the best results would be obtained by a combination of the two methods, and suggested that a better recommendation would be—slaughter of all obviously diseased animals within a short period and isolation of reacting animals with a view to their gradual elimination. He was glad that the author had pointed out the advantages which followed to the farmer, and that ought to be brought home more clearly to the agricultural community than had been done in the past. With regard to the public paying more for tubercle-free milk he was sorry he must agree with the author when he said they did not do so. A farmer with whom he was well acquainted had a very large dairy herd and had made up his mind to attempt to rid it absolutely from tubercle. As a matter of fact the herd was almost free. Prior to making the attempt he made some enquiries with regard to the possibility of being recouped in the way of the price of milk, and he approached one or two of the big London hospitals to see if they would meet him in any way with regard to the price of milk. The only answer he got in each case was "At a certain date we shall be asking for tenders for our milk supply; you can put in a tender and if yours is the lowest you will get the contract." Under such circumstances was there any inducement whatever for a farmer to try and protect his supply of milk? The only inducement they could hold out to the farmer was the general improvement which would follow in the health of his herd. Mr. Male suggested that infected animals should be put on a different farm, but he did not say what he would do with the milk. If they were going to keep reactors or tuberculous animals on a farm, what was to become of that milk? He had a solution, but it was not altogether practicable because they could not get it carried out. The suggestion was that all the milk from the particular farm should be pasteurised and used for butter making, but such milk could not be used for cheese making.

Mr. COLEMAN said his only remark would be with regard to the author's statement that the reaction bore no relation to the extent of infection. The tuberculosis

Order had given them a means of practical experience which they did not before possess, and he had taken advantage as an inspector to try to elucidate some of those points. They were told that when they got a high temperature there was no reliance to be placed on the experiment. He had tested a great many with a high temperature which showed obvious clinical signs of tuberculosis and had destroyed them. A beast whose temperature had not varied from 103 to 106 had tended to go down probably to 102. On post-mortem he found these in a state of very advanced tuberculosis. But in a far greater number of cases he had obtained a very positive reaction, the temperature going up to 106-7, and in these cases again he had found very advanced tuberculosis—terrible cases, where they could hardly think it possible for the animal to have lived so long. Another rather contradictory reaction he had obtained was that an animal had not shown very many clinical signs of the disease, and the temperature had been absolutely normal. At the second and third temperature taking it was still normal, whilst in the fourth it had gone up to 105. In one case the beast was not particularly emaciated and lived, and so far as he could see had absolutely recovered. In that case in the fourth testing it reached 105.

Prof. WOOLDRIDGE pointed out that the President had suggested getting rid of reactors at once from the farm, but he did not tell them how.

The PRESIDENT said that fortunately recently with the cases they had had to deal with they had been able to dispose of them for slaughter. In the early days they were certainly poured into the markets, but that they had stopped. But the type of cows which they could not bring under that class were the cows they bought from a dealer subject to the test. It was a case of self-preservation and he had no remedy to suggest for that, as the dealer was prepared to take the animal back. But dealers had discovered sources of supply, which it would be unwise to give for publication, which were free from tuberculosis. He had tested 24 heifers from a district and had only had one reaction, and that was his repeated experience with cattle coming from the same area.

REPLY.

Mr. MALE: He had to prepare the paper rather hurriedly, and since writing he had looked up various authorities and found that he was supported by a good many in what he had said. He was pleased to hear the President's remarks, and he did not suppose anyone had done more than he to eradicate tuberculosis from the herds in the country. The President had been rather fortunate in his experience of eradicating disease, and said they ought to do it within two or three years. Well, it could be done in one year—if they were drastic enough and slaughtered all the infected animals, but with a big and badly infected herd it was a difficult thing, and the owner would not consent. He thought most authorities agreed that it took a much longer time than that.

Then came the question of putting newly bought cows into the herd; and the President said that if he passed a second test and was isolated for three months everything was all right. Personally he did not agree with him there. It might be in many cases perfectly all right, but they might have cases such as he had quoted, and he had a great many others which he could bring forward. In the case of cow No. 48 which he had quoted, she gave a negative reaction over six years and was found to be badly tuberculous when slaughtered. That cow might have been put in with a healthy herd and have infected a great many others.

The President made some very interesting remarks about young animals, and quoted cases where some reacted and yet showed no evidence of disease when slaughtered. Just recently he had tested some young animals which reacted. One or two reacted twice, and did not react after that. They slaughtered them, and in every case there was evidence of tuberculosis on post-mortem.

The PRESIDENT said he did not say the test was unreliable, but that a great deal of care should be taken in these young animals—a great deal more care than with adult animals.

Mr. MALE said it might have been that with calves the lesions had not become sufficiently developed. He thought many cases were put down to the test being wrong where the tubercle bacilli were growing in the animal, but were not grown sufficiently to be noticed when they died. Personally, he believed the test was right in every case. Mr. Holburn rather questioned his testing, and asked where he got the tuberculin from. Some of the tuberculin came from the Pasteur Institute and some from the Royal Veterinary College. Batches of animals were done at the same time and they had quite good reactions in the others, so that there was no reason to think the tuberculin was at fault. Usually he or his assistants had taken the temperatures, and they did not go to the same places, and therefore with different thermometers there was not likely to be fault there. With regard to what they should do with the milk from reacting cows, if they were rearing calves or keeping pigs the milk might be boiled and given to them.

Prof. WOOLDRIDGE: That would be expensive.

Mr. MALE said if they had any surplus milk that could be biologically examined from time to time, and the udders of the cows could also be frequently examined, and if there were any signs of tuberculosis the milk could be stopped at once. If the milk was examined periodically there was not much risk. In reply to Mr. Coleman, he would find similar cases in his records to those he had quoted.

Mr. A. W. TAYLOR proposed a hearty vote of thanks to the President, and this was seconded by Prof. Wooldridge, who thought they should also express their thanks to the Council of the Royal Sanitary Institute for the facilities given them.

The motion was carried and briefly acknowledged by the President, who said the meeting had been a record one at that Congress.

Cleaner Milk for Birmingham.

The Public Health Committee of Birmingham has recently issued a circular drawing the attention of farmers and milk dealers to the necessity of taking care to ensure that the milk is free from contamination. The following is the suggested method of milking to secure greater cleanliness: (1) The cows and cowsheds to be kept clean; (2) all long hairs on udders and flanks of cows to be kept short by clipping; (3) cows' flanks to be damped with a brush and their udders wiped clean with a wet cloth before milking to prevent dust and dirt from falling into the milk; (4) milkers to wash their hands with soap and water before milking and to wear clean overalls; (5) a covered milking pail to be used with an opening in the side; and (6) the milk to be immediately removed from the cowsheds into a clean dairy and passed through a strainer and cooled. Bacteriological experiments have been made recently in Birmingham at four good dairy farms. The number of germs in 1 c.c. after two hours in milk obtained by ordinary methods varied from 360 to 147,500, the average being 41,312. With the special method they varied from 140 to 400, and the average was 234. The health committee has also issued a circular to shopkeepers who sell feeding bottles appealing to them to stop the sale of bottles with long tubes in the interests of the community.

DISEASES OF ANIMALS ACTS 1894 TO 1911, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange.		Sheep Scab.	Swine Fever.	
	Out-breaks (a)	Animals.	Out-breaks (a	Animals.	Out-breaks (b)	Animals.	Out-breaks (b)	Animals.	(b)	Out-breaks (a)	Slaughtered. *
IRELAND. Week ended Aug. 1	...	...	...	...	...	...	Outbreaks 1		5	4	3
Corresponding Week in 1913	...	...	...	...	...	...	...		1	1	14
Corresponding Week in 1912	1	1	...	2	...	...	1		...	4	32
Corresponding Week in 1911	...	...	...	...	...	...	1		1	4	77
Total for 31 weeks, 1914	1	1	76	955	...	...	55		375	142	709
Corresponding period in 1913	...	...	...	...	...	...	93		352	98	589
Corresponding period in 1912	3	3	16	200	...	...	49		262	161	1421
Corresponding period in 1911	6	7	...	...	2	3	45		246	81	1459

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Aug. 1, 1914

NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection

Return showing the number of Premises on which the existence of TUBERCULOSIS has been notified to the Board of Agriculture and Fisheries during the month of July, 1914.

ENGLAND (Counties)		*
Bedford	2	2
Buckingham	2	2
Cambridge	5	5
Chester	50	53
Cornwall	20	20
Cumberland	7	7
Derby	32	33
Devon	18	18
Dorset	6	7
Durham	7	7
Essex	4	4
Gloucester	9	9
Hants	7	9
Hereford	5	6
Hertford	6	6
Huntingdon	6	6
Kent	9	11
Lancaster	87	90
Leicester	4	5
Lincoln, Holland	4	8
" Kesteven	19	21
" Lindsey	9	9
London	4	4
Middlesex	6	6
Monmouth	1	1
Norfolk	9	10
Northampton	9	9
Northumberland	7	7
Notts	5	5
Oxford	1	1
Salop	12	12
Somerset	13	14
Stafford	33	34
Suffolk	2	2
Surrey	4	4
Sussex, East	10	12
" West	11	15
Warwick	5	5
Westmoreland	2	2
Wilts	29	31
Worcester	9	10
York, East R.	15	19
York, North R.	10	12
" West R.	42	44
WALES.		
Anglesey	4	5
Brecon	1	1
Cardigan	2	2
Denbigh	5	5
Flint	8	8
Glamorgan	1	1
SCOTLAND.		
Aberdeen	33	34
Argyll	4	4
Ayr	20	22
Banff	1	2
Berwick	2	2
Caithness	1	1
Dumfries	3	3
Elgin	1	1
Fife	11	11
Forfar	12	12
Haddington	2	2
Inverness	3	3
Kincardine	4	4
Kirkcudbright	21	23
Lanark	24	25
Linlithgow	1	1
Midlothian (ex City of Edin.):	5	5
City of Edinburgh	2	2
Perth	7	8
Renfrew	6	6
Ross and Cromarty	2	2
Roxburgh	1	1
Selkirk	1	1
Stirling	5	5
Wigtown	7	9
TOTALS	757	808

* Number of bovine animals suffering from tuberculosis of the udder, tuberculous emaciation, chronic cough and showing definite clinical signs of Tuberculosis, or giving tuberculous milk, in respect of which notice of intended slaughter has been received.

Milk Diphtheria Outbreak.

A milk-borne epidemic of the disease has been ivestigated, which occurred in South London at the end of 1913. The districts involved were the metropolitan boroughs of Lambeth, Camberwell, and Lewisham; the county borough of Croydon, and the urban districts of Penge and Beckenham, having a total population of nearly a million persons. Early in the outbreak it became evident not only that it was due to milk, but to the supply from a particular dairy. Altogether there were 119 cases living in 94 houses. There was only one death. The dairy in question was situated in the borough of Lambeth, and the medical officer of health, Dr. Joseph Priestly, has issued a very complete report giving the results of his investigations into the outbreak. He found that two men employed as regular distributors of the milk were actual "carriers," and that two other distributors were probably carriers. These men were withdrawn from their employment as distributors. Inquiries were then made as to the condition of the dairy farm from which the milk was obtained, and Dr. Child, the Medical Officer of Health of the West Sussex Northern Combined Sanitary District, reported that at one of the farms in the Horsham Rural District a milker had been discovered suffering from what was called "milker's finger." By this time the Local Government Board had been informed of the outbreak, and Dr. Hugh A. Macewen was instructed by the Board to inquire into the circumstances of the outbreak. When he visited the Horsham farm he found that the condition of the finger of the milker referred to had become so serious that it was decided to have it amputated, and that the operation had been performed about Christmas time. Dr. Child, believing that there might be some connection between the epidemic of diphtheria and the milk at this farm, caused to be made a bacteriological examination of the amputated finger, with the result that virulent diphtheria bacilli were isolated, which on inoculation into a guinea-pig killed the experimental animal in forty-eight hours. Four other men were employed as milkers at the farm, and one of them was found to have sores on the thumb and first finger, from which a clear fluid was by pressure obtained. This fluid was sent away for bacteriological examination. A virulent diphtheria bacillus was obtained, which on inoculation into a guinea-pig killed it in forty-eight hours. This man asserted that he had nothing wrong with his hands before he began work as a milker. A second man had a large sore on the back of his hand, besides other small sores on his fingers. These sores were quite dry, so that no specimen could

be obtained from them. The other two men had no sores. The throats of all the milkers, as well as the farmer, his wife, and daughter, were swabbed, but the results of examination for the diphtheria bacillus were negative. Upon inspecting the cows it was found that five of them had irregular-shaped sores on the udders and teats. It is to be regretted that on the day of examination the healing process was practically complete and the removal of the sores left a dry surface, so that it was impossible to take samples with a view to the discovery of the causative micro-organisms. Dr. A. R. Littlejohn, M.R.C.V.S., who has recently been added to the medical staff of the Local Government Board, assisted Dr. Macewen in his investigation, and considered that the sores on the teats resembled cowpox. On this assumption, as Dr. Macewen points out, the diphtheria infection of the teats may have been super-added to sores caused by another disease of the cow, and that the sores on the teats were not necessary a local manifestation of diphtheria. When it was discovered that the hands of one of the milkers was infected, those with sores were given other work to do on the farm. It should here be noted that as early as December 12th, and as soon as Dr. Priestley suspected that the outbreak was milk-borne, all the milk from the dairy was, at his suggestion, pasteurised. An interesting feature of this outbreak is the fact that the milk may have been infected either by the distributors, who were discovered by Dr. Priestley to be carriers, or from the milkers at the dairy farm who had diphtheritic sores on their hands, or there may have been a combination of the two.—*The British Medical Journal.*

Meat Prosecution at Bilston: Conflicting Evidence.

Before the presiding magistrate, Mr. H. H. Ward, at Bilston Police Court, on Friday, 24th July, Alfred Wm. Davies, butcher, of Great Bridge, West Bromwich, was charged with exposing unsound meat for sale in Bilston Market.

Mr. A. L. Arlidge, Clerk to the Bilston Council, supported the prosecution, and Mr. J. S. Sharp, West Bromwich, defended.

Fred Barnett, Inspector of Nuisances at Bilston, deposed that on June 20th he inspected the meat on the defendant's stall in the Market Hall, which he found to be dark in colour, sticky, blood-stained, and smelt offensively. He considered it unfit for human food, and summoned the medical Officer, who instructed him to seize it. A magistrate subsequently condemned it, and the meat was destroyed. In reply to Mr. Sharpe, witness said the weather was hot. There was no exudation from the meat.

Dr. T. Ridley Bailey, Medical Officer, who also inspected the meat, said there was very little fat upon it, and pieces belonging to another animal were attached to it. There were no internal organs to be seen. He considered the meat was diseased and unfit for human food, some of the parts smelling of decomposition. It was impossible to say what the disease was because of the absence of the internal organs, but the glands suggested tuberculosis.

Mr. Sharpe said there would be a conflict of testimony between the doctor and the inspector and two veterinary surgeons he proposed to call, who also inspected the meat before it was destroyed.

The defendant said he bought the animal at the Great Barr sale on the 17th June. He killed it on the Wednesday, sold the internal organs in the shop at Great Bridge, and sent the carcase to Bilston. Witness said he gave £8 for the beast.

Messrs. Pickworth and Harvey Collett, veterinary surgeons, West Bromwich, denied that the meat was sticky, blood-stained, or offensive, Mr. Pickworth adding that he told Davies he would not mind eating some of it.

The magistrates retired, and gave the following decision: "We find the evidence in this case to be so conflicting that we have agreed to dismiss it."—*Express and Star* (Birmingham).

The Jockey Club and "Doping."

The following notice appeared in a recent issue of the *Racing Calendar*:—

NEWMARKET SECOND JULY MEETING.

After the race for the Swaffham Handicap, the Stewards of the Jockey Club ordered an examination to be made of the winner, Red Finch, to satisfy themselves that there had not been in this horse's case any infringement of Rule 176 (1) relating to the administration of stimulants.

The Stewards took this action on account of the unusual excitement shown by the horse both before and after the race.

A sample of the horse's saliva was taken by Prof. Macqueen, of the Royal Veterinary College, and subjected to a most careful test by Dr. Lander, also of the Royal Veterinary College, who reported as follows:—

"The Royal Veterinary College, Camden Town, London, N.W., July 20, 1914.

"To the Stewards of the Jockey Club.

"Gentlemen,—I beg to report to you on the examination of the contents of the jar marked 'F,' received here on July 17, 1914.

"From my examination I was unable to obtain evidence of the presence of a doping agent.

"I am, gentlemen, your faithfully,

"G. D. LANDER, D.SC., F.I.C., Professor of Chemistry."

The Stewards of the Jockey Club give notice that it s their intention from time to time to order the examination of horses with a view to satisfying themselves that Rule 176 (1), dealing with the administration of stimulants to horses, is not being disregarded.

In some cases races will be selected beforehand (as in the Milburn Plate at Sandown), and an examination of the placed horses in these races will be made irrespective of what the placings in the race may be. In such cases the fact that an examination has been ordered must not be construed as indicating that any suspicion whatever attaches to the owner or trainer of any particular horse, and it is therefore not the intention of the Stewards to publish the result of the examinations which will from time to time be made by their order, unless such evidence of drugs having been administered be forthcoming as to make it necessary to do so.

Immunisation against Rabies.

Madame Phisalix, who is attached to the Laboratory of Experimental Physiology of the Museum of Natural History, has made an interesting discovery with regard to the neutralisation of the virus of rabies by the venoms of batrachians and snakes. These two viruses appear to neutralise one another and to create an immunity in a subject subsequently inoculated with the virus of rabies. Many rabbits were given by intravenous injections about 10 mgm. of viper venom—a dose double the lethal quantity, as proved at the same time with controls. Six days after the last test the rabbits thus treated were trephined and fixed rabic virus was injected under the meninges. Control rabbits treated in the same way without any preventive inoculation were attacked by rabies some hours later. Of six rabbits inoculated with the venom of the sala-

mander, five remained entirely unaffected. Only one, in which 15 days were allowed to elapse between the immunisation and the inoculation with rabies, died rabid. The duration of the immunity conferred by the Association of the venom of snakes and batrachians is therefore quite short. Other experiments show its duration to be from three to six weeks, but that it completely disappears by the end of two months. Madame Phisalix has further been able to show that the association of the two venoms is necessary. Rabbits immunised with salamander or viper venom alone showed no resistance to the virus of rabies.—*The Lancet.*

Failure to report a Tuberculous Cow.

At East Grinstead Petty Sessions, before Mr. J. A. Nix (in the chair), Dr. Stuart J. Reid, Mr. T. H. W. Buckley, Mr. C. Holmden, Mr. J. Godwin King, Mr. J. Waters, and Mr. E. W. Young, Henry and Ernest Pilkington, farmers, of Owletts Farm, Hammerwood, were summoned for failing to report a diseased animal, under the Tuberculosis Order, 1913.

Mr. Lawson Lewis, who prosecuted on behalf of the police, stated that that was the first case in the district under the Order.

P.S. Taylor stated that on 18th June at East Grinstead cattle market, he saw a cow in the fat pens with a swollen udder. He served a detention order on defendants, and told them to take the cow back to the farm to be further examined.

Cross-examined by Ernest Pilkington, witness said the cow was in rather poor condition, and he was surprised to find it in the "fat" ring. The fat bullocks might have shown up its condition more.

Mr. J. B. Dier, M.R.C.V.S., veterinary inspector for the district, stated that on examining the cow he found that two quarters of the udder were indurated and two were all right. The fact of the udder being indurated was easily observable, as in such cases the udder was hard and lumps existed of various sizes. There was no heat or pain as in the case of a chill. Defendants admitted that they knew something was wrong with the udder, but said they did not think it was indurated. They put it in the fat ring because they thought it would do to be sent to London and knocked down as it was. On the 19th inst., witness went to Owletts Farm and took a sample of the milk, which, on a microscopical examination, he found to be in a very filthy state. He also applied the tuberculin test, and reaction set in. The animal was slaughtered and the carcase was condemned. The lungs showed tuberculosis, and he thought it highly dangerous that an animal in that condition should have been brought into the market.

Cross-examined: The cow was not in full flesh. He thought a casual observer would have detected that the cow was suffering from the disease.

Ernest Pilkington, in a statement to the Bench, contended that he and the other defendant had no reasonable ground for thinking the animal was affected with indurated udder; and secondly, that the prosecution had failed to prove their case. In a herd of cows ailments were continually cropping up, and farmers got into the habit of relying upon them to cure them themselves. They were not always in a position to rely on a veterinary surgeon. They noticed that the milk in two quarters was not right six weeks before they sent the cow to the market. They did not use the milk of the two quarters, and they would not have thought of selling the cow for milking purposes. The terms of the Order were rather vague, and some of them had been disputed.

The Bench retired to consider their verdict, and on their return the Chairman said they had decided to convict. It did not seem to him that the defendants properly understood the charge, and, as the matter was of importance to farmers, he would point out that it did not mean that the farmer had to call in veterinary advice, but if they noticed anything wrong with a cow which they might think was tuberculosis, they should at once give notice to a constable, who would take the necessary steps. The Bench considered that defendants had infringed the Order, and as a warning to others they would be fined £5 and costs (£1 9s.)—*Sussex Daily News.*

Failure to notify Tuberculosis.

Carolus Munday, a dairyman, of Shripney, Bognor, was summoned for having in his possession a cow suffering from tuberculosis and failing to give notice under the Tuberculosis Order on June 6th.

Mr. J. E. Dell conducted the prosecution, and Mr. Ricketts defended.

Deputy Chief Constable Ellis said that when he visited defendant's farm he found a red and white cow in a shocking condition. He had never seen such an object in all his experience after 40 years.

Mr. R. W. Dawtrey, M.R.C.V.S., Inspector under the Tuberculosis Order, said it was patent to anyone that the cow was suffering from tuberculosis on June 6th.

Mr. Dell: Would it be an exaggeration to say the cow was eaten up with tuberculosis:—Witness: The carcase was full of tubercular deposits.

Mr. J. T. Angwin, M.R.C.V.S., of Arundel, for the defence, certified that the cow was suffering from metritis when he examined it on June 3rd. He advised defendant to have the cow slaughtered. Had the cow been suffering from tuberculosis he should have notified it under the Order.

The Bench imposed a fine of £5 and 10s. costs and allowed a guinea advocate's fee, and a guinea for the veterinary surgeon, making a total penalty of £7 12s.—*The Evening News* (Portsmouth).

Instruments, Drugs, etc. at the International Congress.

Among the many who suffered disappointment by the closing of the Congress were those firms who had prepared for a week of business—for the inspection by old and new customers of a fuller display than is possible in the usual course of business, anywhere but at their own premises. Anything like an enumeration of the exhibits is not now possible, but we give a list of exhibitors so far as they were noted in a brief visit on the Monday.

Arnold & Sons: A large show of instruments.
A. Favre & Co., 122 Newgate Street, E.C.: Hauptner veterinary instruments.
Baird & Tatlock (London) Limited, Laboratory Furnishers.
Willows, Francis, Butler & Thompson: Drugs and preparations.
Burroughs Wellcome & Co.: Sera, vaccines.
Leitz.: A handsome exhibition stand of microscopes and appliances.
C. J. Hewlett & Son, Ltd.: Drugs and surgical instruments.
"Izal": Preparations of the disinfectant.
Wyleys, Limited, Coventry: Medicinal preparations including horse balls and blisters.
Menley & James, Ltd., Manufacturing rhemists.
S. Maw, Son & Sons, 7-12 Aldersgate Street, E.C., Army contractors: Instruments and appliances, microscopes, centrifuges.
Parke Davis & Co., Manufacturing Chemists.
Ballière, Tindall & Cox: Folding models, text books, etc.
Pearson's Antiseptic Co., Ltd.: Antiseptics.
E. Cook & Co.: Disinfectants.

Sharp & Smith : Surgical and veterinary instruments
Anglo-American Pharmaceutical Co. : Huxley's Pharmaceutical products.
The "Sanitas" Co., Ltd.: Disinfectant manufacturers
C. H. Huish & Co. : Instruments and appliances.
Trommsdorff, Wholesale Chemist : "Bissulin."
Jeyes : Preparations of their disinfectants.
C. Hearson & Co., 68 Willow Walk, S.E. : Centrifuges, incubators and other appliances.
Watson & Sons : Microscopes and appliances.

PARLIAMENTARY.

Bills Passed.

In the House of Commons, on Friday, August 7 :
The Lords' amendments to the Milk and Dairies Bill were agreed to.

In the House of Lords, on Friday, Aug. 7 :
The following Bills went through their respective stages and were passed :
Diseases of Animals (Ireland) Bill. Milk and Dairies (Scotland) Bill.

ARMY VETERINARY SERVICE

Extract from *London Gazette*,
War Office, Whitehall, Aug. 7.

Territorial Force. Army Veterinary Corps.

Lieut. C. Hartley to be Capt. Dated April 23rd.
August 11.

Supplementary to Regular Units or Corps.

Army Veterinary Corps.

Cadet G. C. Lancaster from Royal Dick Veterinary College (O.T.C.) to be Lieut. Dated Aug. 1.

Personal.

Thexton.—On Aug. 3rd at Mayor's Walk, Pontefract, to Mr. and Mrs. P. Thexton, M.R.C.V.S., a daughter.

Mr. R. Chrystal Irving, F.R.C.V.S., London, was one of the Hunter class judges at the Fiftieth Annual Show of the Dumfries Agricultural Society last week.

Prof. J. R. M'Call, of the Glasgow Veterinary College, judged the Hackneys at the same show, and

Mr. J. Baird, M.R.C.V.S., Dumfries, obtained a first in the Hackney class for Mare and Gelding foaled in 1911.

Mr. H. L. Torrance, M.R.C.V.S., D.V.S.M., of Shotts, Lanarkshire, has been appointed Assistant Veterinary Inspector to the Corporation of Sheffield in succession to Mr. H. P. Lewis, M.R.C.V.S., who was recently appointed Assistant Veterinary Inspector to the Corporation of Kingston-on-Hull.

Mr. James Dodd, M.R.C.V.S., Sligo, was awarded first prize in the open class for stallions (general purposes) at the Sligo Agricultural Society Show for his six-year-old chestnut, Kilcaskin, which has won many prizes for him in the past.

Mr. D. Barry, M.R.C.V.S., Skibbereen, gained a second in the thoroughbred sires, at the Carbery Agricultural Society Show, at Skibbereen, on 29th July.

OBITUARY

Walter G. B. Dickinson, F.R.C.V.S., F.R.S.E., T.D., Boston, Lincs.
Graduated, New Edin : July, 1881. F. July, 1887.

Mr. Dickinson died at Boston on Thursday, 6th inst. His age was 57 years.

THE URGENT CALL FOR VETERINARY SURGEONS.

Sir,

Is it not worth the immediate consideration of our veterinary schools, if they should not open immediately for a short session. The Council then to hold a special examination with a view to passing out such Class D men as may qualify thereat, and so save valuable time.

Not only are men wanted for Army and Territorial Forces, but many of our members have at the call of duty hurriedly left their practices with actually no one in charge.

By Bye-law (92) the President R.C.V.S. has power to direct "a Special Court of Examiners" . . . . . "on any emergency."

I write you direct as the matter is of too great an urgency to admit of my communicating with the Principals of Schools as I could have wished.—I am, sir, yours obediently, R. C. Trigger, F.R.C.V.S.

Newcastle, Staffs. Aug. 12th.

DISEASES OF ANIMALS ACTS 1894 TO 1911, SUMMARY OF RETURNS.

Period.		Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange.		Sheep Scab.	Swine Fever.	
		Out-breaks (a)	Animals.	Out-breaks (a	Animals.	Out-breaks (b)	Animals.	Out-breaks (b)	Animals.	(b)	Out-breaks (a)	Slaughtered.
Gt. BRITAIN. Week ended Aug. 8		12	13			2	2	7	10		51	670
Corresponding week in	1913 ...	10	11			1	3	27	34	1	41	632
	1912 ...	8	10	3	26	7	7	29	63	4	43	935
	1911 ...	11	15			2	3				45	654
Total for 32 weeks, 1914		494	535	11	74	71	176	1524	2658	150	2650	28188
Corresponding period in	1913 ...	361	395			108	284	1846	3744	125	1573	21352
	1912 ...	545	621	63	410	117	223	2298	5017	170	2114	27531
	1911 ...	537	669	7	420	120	298			306	1659	13355

(a) Confirmed. (b) Reported by Local Authorities.
† Counties affected, animals attacked : London 2.
Board of Agriculture and Fisheries, Aug. 11, 1914.